

## **Hepatitis Awareness Month: An Overview of Viral Hepatitis in Indiana**

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May is Hepatitis Awareness Month. Hepatitis is a serious infection that deserves close attention. In the United States in 2003, more than 160,000 new cases of viral hepatitis were reported, and chronic hepatitis infections affect millions of Americans.

Hepatitis is defined as an inflammation of the liver. Several viruses can cause hepatitis, and three forms of viral hepatitis—A, B, and C—are prevalent in the United States. Symptoms include fatigue, loss of appetite, diarrhea, nausea, vomiting, and jaundice. Adults are more likely to exhibit symptoms than children. Unfortunately, no cure exists for viral hepatitis, only medical management of the disease. Vaccines are available to prevent hepatitis A and B, but there is no vaccine to prevent hepatitis C.

### **Hepatitis A Virus (HAV)**

Hepatitis A is usually transmitted by food or water contaminated with fecal material. HAV can also be transmitted from person to person via the fecal-oral route. The illness lasts anywhere from two to six months. There is no long-term or chronic infection. A blood test (IgM anti-HAV) is used to confirm HAV infection. In 2003, an estimated 61,000 new cases of HAV infection were reported in the U.S.

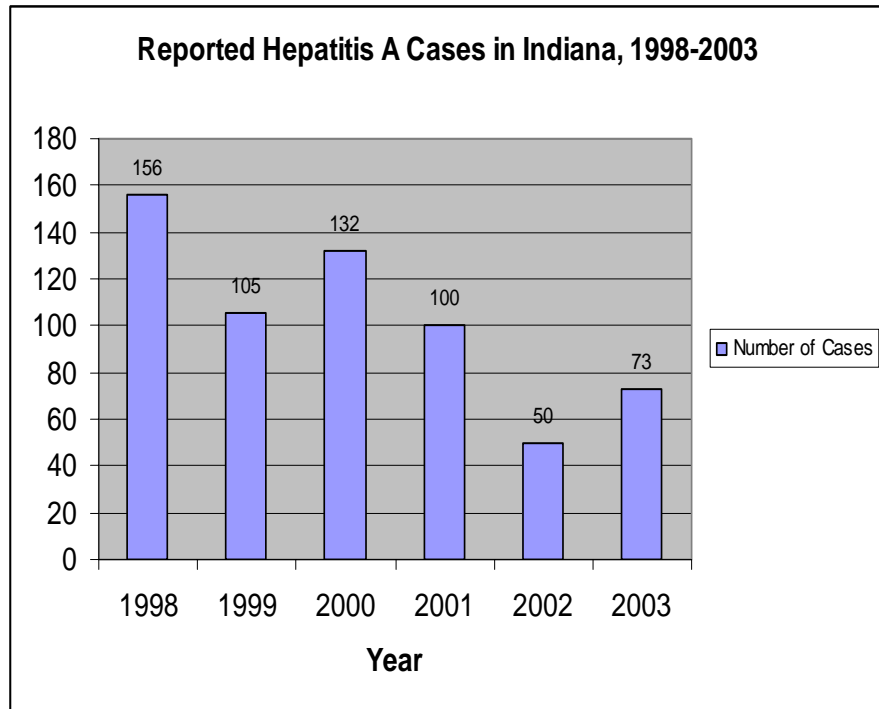
Luckily, there is an immune globulin that offers limited protection following exposure. There is also a vaccine to provide long-term protection. The hepatitis A vaccine, a two-dose vaccine, is safe, effective, and highly immunogenic. At least 97% of people have protective levels of antibody within one month after receiving the first dose of the vaccine, and 100% have protective levels after the second dose. While widespread vaccination is not currently recommended, the vaccine is recommended for:

- persons ages 2 years and older traveling to countries with high rates of hepatitis A,
- persons who live in communities that have prolonged outbreaks of hepatitis A or high rates of hepatitis A,
- men who have sex with men,
- persons who use street drugs,
- persons with chronic liver disease,
- persons who receive clotting factor concentrates.

A 2003 outbreak of HAV infection associated with consumption of raw or undercooked green onions from a Chi Chi's restaurant in western Pennsylvania underscores the importance of vaccinating at-risk persons. Unfortunately, this outbreak resulted in more than 500 reported cases and at least 3 deaths.

Indiana is not considered as a high-risk state for hepatitis A. The graph below illustrates the number of HAV cases in Indiana during the six-year period, 1998-2003.

Figure 1.



Although Indiana has a small number of reported cases, the results of a single infection can be dramatic. For example, during the summer of 2004, it was determined that a food worker was hepatitis A positive, which resulted in providing nearly 6,000 people with immune globulin (IG) to protect against infection via this single exposure. Luckily, no other infections were reported; however, this single event cost Indiana approximately \$132,000 in IG alone. The \$132,000 does not include medical supplies, man-hours, etc.

### **Hepatitis B (HBV)**

Hepatitis B virus is transmitted by direct contact with infected blood or body fluids. Infection is confirmed through the results of a blood test (HBsAg). Hepatitis B can result in short-term (acute) infection lasting about six months or lifelong (chronic) infection.

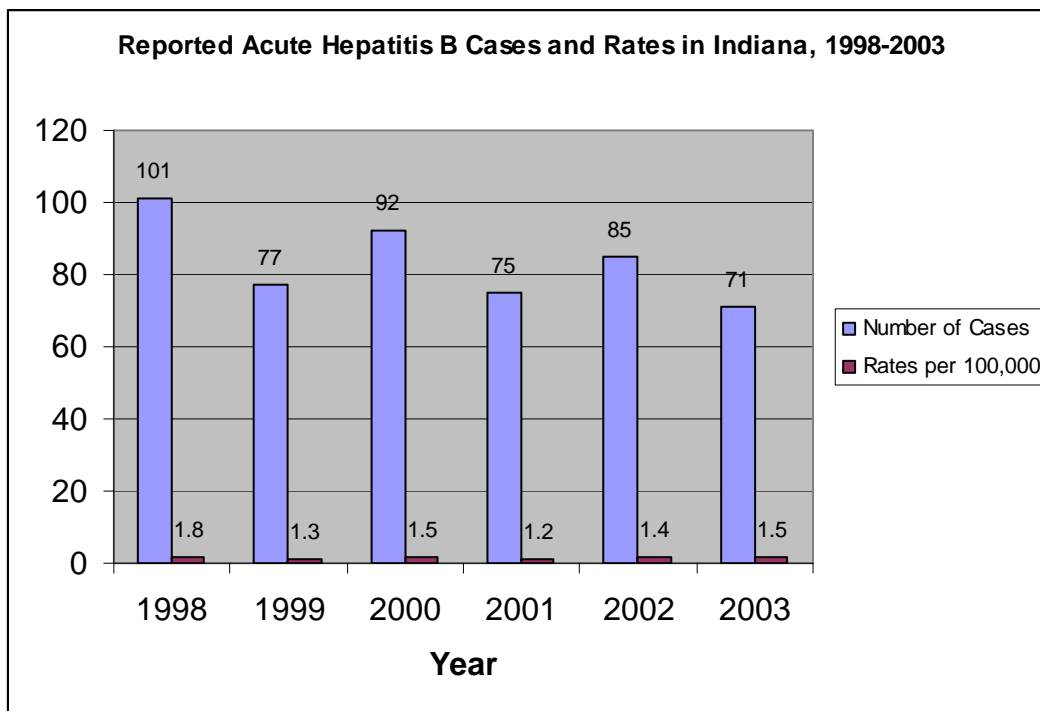
Chronic infection may develop in about 90% of persons exposed at birth to HBV but only in about 5% of those exposed as adults. In the U.S., about 5,000 people die each year from chronic liver disease and liver cancer caused by HBV.

About 1.2 million people chronically infected with HBV live in the United States. In the U.S. in 2003, there were approximately 73,000 new reported cases, which is a decrease from the peak of 260,000 in the 1980s. The first vaccine for HBV was introduced in 1982. The vaccine usually requires three doses to provide complete protection. The vaccine is safe, effective, and provides at least 15 years of demonstrated immunity. Currently, a booster dose of vaccine is not recommended. There is also an immune globulin specific for hepatitis B that provides temporary protection following an exposure. Routine vaccination is recommended for:

- All babies at birth,
- Children (ages 0–18 years) who have not been vaccinated,
- People who travel or live in endemic areas,
- Sexual and household contacts of an infected person,
- Men who have sex with men,
- People who have multiple sexual partners,
- People who are injection drug users,
- Health care and public safety workers,
- Hemodialysis patients.

The following chart shows the six-year (1998-2003) trend for HBV infection in Indiana.

Figure 2.



Indiana is one of 47 states that includes hepatitis B vaccination as part of the childhood vaccine series for school entry (kindergarten or grade 1). Beginning in July 2005, every child who enters grade 9 and grade 12 must be vaccinated for hepatitis B. Hepatitis B vaccination is also recommended for teenagers prior to high school graduation. The communicable disease law requires the reporting of hepatitis B infection during pregnancy by the health care provider, testing facility, and the hospital where the delivery occurs. Most women in Indiana are tested for hepatitis B during pregnancy. Because newborns are at an increased risk to develop chronic hepatitis B, administration of a birth dose of the hepatitis B vaccine is recommended. Newborns of a hepatitis B-positive woman are at the highest risk and should also receive the hepatitis B immune globulin (HBIG). For example, up to two thirds of infected infants have contracted the disease from an infected household member or caregiver. As a result, all infants should receive the birth dose of hepatitis B vaccine to protect them from a household infection. Unfortunately, only 75% of the hospitals in Indiana routinely administer the birth dose.

Indiana has a program to manage cases involving hepatitis B-positive pregnant women. The responsibilities of the Perinatal Hepatitis B Program include case management, disease prevention, and disease education. In 2003, 113 infants were born to identified hepatitis B-positive women. Due to the efforts of the Perinatal Hepatitis B Program, 96% of the 113 infants received the appropriate treatment at birth. For more information, please contact Beverly Sheets, Perinatal Hepatitis B Supervisor, Immunization Program, Indiana State Department of Health, at 317.501.5722 or [hepbbev@aol.com](mailto:hepbbev@aol.com).

## **Hepatitis C**

The hepatitis C virus (HCV), transmitted by direct blood-to-blood contact, is the leading cause of liver transplants. A recent survey concluded that 1.8 percent of Americans (3.9 million) have been infected with HCV. Of those 3.9 million, most (2.7 million) are chronically infected. Indiana reported 5,134 new confirmed HCV positive tests in 2003 and 6,314 in 2002. Unlike hepatitis A and B, there is no vaccine or immune globulin to provide protection from hepatitis C.

The leading risk factor for acquiring HCV is injection drug use (IDU); IDUs account for 60% of HCV infection. Blood transfusion recipients (acquired prior to the implementation of blood supply screening in 1992) account for 10% of the infection. Sexual transmission accounts for 15% of infection, although transmission is highest among individuals who have had 50 or more lifetime partners. Transmission among monogamous couples is extremely low. Five percent of HCV infection is attributed to hemodialysis, health care workers, and mother-to-child transmission. The remaining 10% is of unknown or not identifiable causes.

Hepatitis C surveillance in Indiana is administered through mandatory laboratory reporting. Because these reports come from laboratories and not from physicians, demographic information, such as the patient's race or county of residence, is frequently lacking. Also lacking from this type of reporting is risk factor (how the disease is acquired) information. The omission of these data impedes the best direction of resources to curtail the spread of infection. Therefore, as is true in the other 49 states, Indiana relies on the Centers for Disease Control and Prevention (CDC) recommendations for conducting hepatitis C intervention activities.

The focus of prevention and education activities in Indiana is multifaceted. The burgeoning cost of HCV infection to Indiana's health care system requires the integration of HCV services into existing public health care settings such as HIV/STD programs, neighborhood health centers, and local health departments.

To help reduce the incidence of HCV disease, it is necessary to collaborate with other established public health programs including HIV/STD, Immunization, and Indiana Department of Correction (DOC) and Mental Health. Indiana is a leader among states in beginning the hepatitis integration process on a statewide basis and implementing it at the local level.

Indiana is proceeding with this integration in the following ways:

1. We have established guidelines for the local health departments (LHD) to follow regarding the reporting of HCV infections.
2. We are conducting HCV training programs for the LHD nurses, disease intervention specialists (counselors for clients serviced at STD and HIV clinics), and HIV caseworkers throughout Indiana on an as-needed basis. These programs focus on the medical course of infection, interpretation of test results, community resources for treatment referrals, and the integration of patient education and counseling techniques.
3. We have developed protocol for testing at-risk clients in HIV and STD settings.
4. We are providing HAV and HBV vaccine for at-risk clients in STD clinics. Programs offering this service include:
  - a. Allen County Health Department, Ft. Wayne;
  - b. Bartholomew County Health Department, Columbus;

- c. Bell Flower Clinic, Indianapolis;
- d. Community Health Services, Bloomington;
- e. East Chicago Health Department, East Chicago;
- f. Elkhart County Health Department, Elkhart;
- g. Gary City Health Department;
- h. LaPorte County Health Department, LaPorte and Michigan City;
- i. Planned Parenthood of Lafayette, Lafayette;
- j. St. Joseph County Health Department, South Bend;
- k. Vanderburgh County Health Department, Evansville;
- l. Vigo County Health Department, Terre Haute;
- m. Madison County Health Department, Anderson;
- n. Howard County Health Department, Kokomo;
- o. Healthy Teens and Families, Kokomo;
- p. Porter County Health Department, Valparaiso;
- q. Clark County Health Department, Jeffersonville.

If you are interested in hosting an HCV educational training or one-day seminar in your area, please contact: Cheryl Percy, Hepatitis C Coordinator, HIV Division, Indiana State Department of Health, at 317.233.8602 or [cpercy@isdh.in.state.us](mailto:cpercy@isdh.in.state.us).

### Viral Hepatitis Conclusion

The charts below illustrate the number of high-risk adults who were vaccinated in Indiana STD clinics.

Figure 3.

**Adult Hepatitis B Dose**  
Indiana STD Clinics 2004

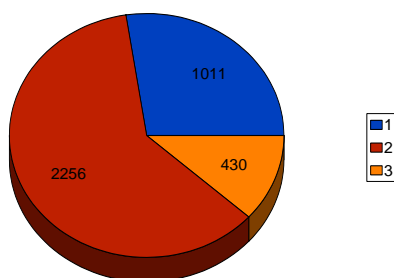
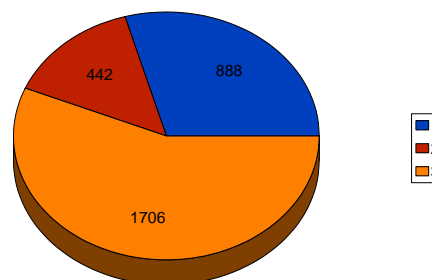


Figure 4.

**Adult Twinrix Doses**  
Indiana STD Clinics 2004



According to the CDC and the 2003 National Immunization Survey, approximately 92.6% of Indiana children completed the hepatitis B vaccination series by age 24 months. Indiana has a Vaccines for Children (VFC) program that provides free vaccine, including the vaccines for hepatitis A (when recommended) and hepatitis B, to children (ages 0-18 years) if they are on Medicaid or without health insurance. To become a VFC provider, please contact Beverly Sheets, VFC Supervisor, Immunization Program, Indiana State Department of Health, at 317.501.5722 or [hepbbev@aol.com](mailto:hepbbev@aol.com).

The American Liver Foundation (ALF) has an Indiana Chapter and works closely with the Indiana State Department of Health (ISDH). The purpose of this partnership is to provide educational opportunities for Indiana residents. The Web-site address for ALF is [www.americanliverfoundation.org](http://www.americanliverfoundation.org).

The ISDH has established a working group for viral hepatitis comprised of representatives from each of the viral hepatitis program areas. This group will serve as the foundation for forming a coalition necessary to create a state strategic plan to address hepatitis issues in Indiana.

If you are interested in participating in ALF or in the strategic planning process, please contact: Cheryl Percy, Hepatitis C Coordinator, HIV Division, Indiana State Department of Health, at 317.233.8602 or [cpercy@isdh.in.state.us](mailto:cpercy@isdh.in.state.us).